Silvicultural Systems Program
NOTES TO THE FIELD

WILDWOOD TREE FARM: 50 YEARS OF SELECTION FORESTRY

"With this system, your land is never out of production – you're always growing trees."

Merv Wilkinson

As you drive through the gate of Merv Wilkinson's Wildwood Tree Farm, you are immediately struck by the peaceful, park-like setting of the landscape. Except for the tell-tale stumps in varying stages of decay scattered throughout the trees, there are few obvious signs that this is a working forest. And yet Merv has been harvesting timber in his woodlot at a rate of 160 m^3 annually since 1945.

Purchased in 1938, Wildwood is 55 ha of private forest land located in the Coastal Douglas-fir biogeoclimatic zone at Yellow Point on Vancouver Island. "When I first bought the property, I wondered what I was going to do with it," recalls Merv. "I'd grown up in a rural community, so I naturally turned my attention towards some form of agriculture."

While taking an agriculture course at UBC, Merv linked up with a former forestry instructor from Denmark who convinced him to study forestry instead. Merv found himself attracted to selection forestry, and from there on he was hooked. Over the last 50 years, he has refined his unique management style through research, careful observation, and—perhaps the greatest teacher of them all—trial and error.

Merv practices what he calls "sustainable, selective logging." By sustainable, he means keeping the forest in production at all times, maintaining the level of growth in the stand, and never overcutting that rate of growth. "I work with nature," he says, "and I want to leave the forest a very attractive place when I'm done."

BRITISH COLUMBIA

VOLUME 3

JULY 1996

106-06564/

Leaning against one of his old-growth trees, Merv points to a large stump with a mature Douglas-fir growing beside it. "I cut that in 1945," he says, nodding towards the stump. "The good-sized one growing next to it was little more than a seedling at that time. But by leaving it undisturbed, look how much growth I've gained since then. That piece of land has never been out of production, and if you're going to be in the forestry business, you don't want your land sitting idle."

Planning the Cut

Merv bases his annual cut rate of 160 m^3 on his property's annual growth rate, minus a small safety margin. In setting his annual cut allowances, he counts the larger timber as well as all wood over 6 inches that gets used for fence posts, shakes, and firewood. Merv usually harvests his timber in 5-year cutting cycles, removing up to 800 m^3 at a time. He is currently completing his 10th cut, and estimates his forest will have roughly the same volume of timber remaining after the cut is finished as was originally cruised back in 1945.

With Merv's selection system, his land is in production at all times.

When planning a cut, Merv keeps his ultimate goal of preserving the diversity of the forest in mind. His cuts are designed to maintain a canopy of mixed species, mixed heights, and mixed ages. He selects the trees for his cuts carefully, choosing mature marketable timber as he works his way from one end of his property to the other. After so many years on the same parcel of land, Merv knows the history and potential of his trees intimately, and this detailed knowledge helps him determine which trees to select for a cut and which ones to defer to future harvests.

Merv feels his management style is fairly close to what foresters call "a true selection system," but with one major exception. "I don't over manage my forest," he says. "I take my lead from nature rather than a textbook. Good forestry requires the flexibility to make decisions based on what is going on in the forest, not always according to rules and theories."

Any unproductive, diseased, damaged, or genetically inferior trees are automatically inventoried for the next cut. Even from his diseased trees, Merv usually gets usable wood because he cuts on a regular basis and is able to utilize the timber before the disease progresses too far. "I used to take more of my cut from trees that were beginning to taper off and die out," Merv quips, "but I have very few of those anymore...not that I mind."

Maintaining a Healthy Forest Naturally

Today, Merv considers his woodlot to be relatively disease free. He attributes the health of his forest to good genetic stock, rich soil, and a diverse mix of tree species, sizes, and ages. "Biological diversity," he notes, "seems to provide a measure of natural immunity or resistance to insect and disease infestations. As a result, I don't have root rot or conk problems."

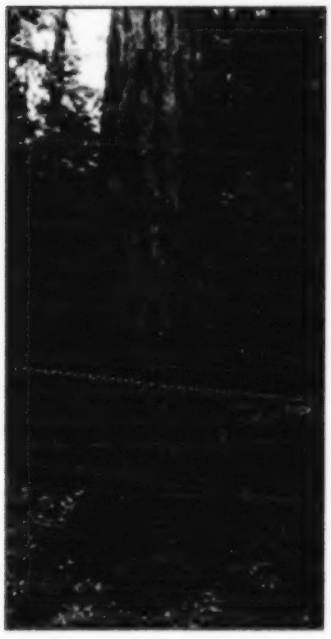
For insect control Merv uses natural methods, citing that pesticides also remove beneficial insects and birds that feed on insect pests. He encourages birds to live in his forest by providing quality habitat and wildlife trees, and credits the birds for keeping his insect populations in check. As a case in point, Merv recounts seeing one of Wildwood's four mating pairs of Pileated Woodpeckers "farming" carpenter ants. The woodpeckers fed extensively on the ants, but not to the point of eradicating the whole colony. This allowed the ant population to eventually recover and continue providing the birds with a steady source of food.

Merv estimates there are 20–30 active wildlife trees on his property at any one time. He tries to maintain this number, and only removes wildlife trees once they are abandoned or if he feels he has too many. Merv has been managing for wildlife trees from the beginning; in fact, you could say he was 50 years ahead of his time. In 1945, he received a warning from the Forest Service for refusing to remove all the

snags on his property. The issue was resolved when he agreed to keep his equipment a safe distance away from the snags, technically establishing a sort of no-work zone.

"So that's where we left it," Merv recalls. "One of those snags just fell down last winter. All that time it was a nest for woodpeckers almost every year. It was also home for a Screech Owl, Wood Ducks, and a whole menagerie of critters—Tree Swallows, wrens, creepers. That one snag provided habitat for maybe 50 generations of birds."

Another important forest value that Merv manages for is coarse woody debris, although, by his own admission, he hasn't always done so. About 15 years ago, Chris Maser, author of *The Redesigned Forest*, visited Wildwood and told Merv he had a good operation, but it was a little too tidy. "I listened to that advice, and I can see the difference already," says Merv. "Now I leave from 8 to 10% of a cut on the ground. The larger pieces form habitat and nurse logs, and the smaller debris rots to form new organic material for the soil. There is no need to use artificial fertilizers when nature can do it better and more efficiently."



Wildlife trees are an integral part of forest management at Wildwood.

To control underbrush and competing vegetation, Merv usually grazes a small number of sheep. At present, however, he is using a couple of cattle because a pack of roaming domestic dogs were harassing sheep in the area. Once the dogs are back under control, Merv will go back to using sheep because he feels they don't compact the soil or trample young seedlings as much as cattle do. He maintains that if sheep are carefully controlled and given supplemental feeding to prevent overgrazing, they can provide excellent brush control without the need for herbicides.

Merv leaves up to 10% of a cut on the ground as coarse woody debris.

Reforestation by Natural Seeding

Reforestation on Wildwood is accomplished entirely through natural seeding. Merv keeps his best trees for seed trees and staggers them throughout the property for an even distribution of seed. To ensure good germination and growth, he thins the canopy to allow approximately 50% of the light to reach the forest floor. "My rule is: Leave enough light to make the trees grow, and enough shade to make them reach for the light." Merv calls his "50% rule" the key to Wildwood's success, claiming it produces quality trees with long straight trunks, healthy crowns, and minimally sized limbs.

"The bulk of the trees that I grow have a very tight grain," he adds. "By having to grow up to get to the light, my trees put on most of their volume in height rather than thickness, and tend to have fewer and smaller limbs. This is where growing trees under a canopy can produce clear, top quality wood."

The species mix in Merv's woodlot includes a variety of conifer and hardwood species, the more prominent ones being Douglas-fir, western redcedar, grand fir, hemlock, bigleaf maple, red alder, wild cherry, and arbutus. "I feel each tree has its own contribution to make," says Merv. "And I cut and thin with the idea of keeping the species

All regeneration on Wildwood is through natural seeding.

composition reasonably stable, except where I see a natural changeover wanting to take place. I have some areas that have swung over from fir to cedar, and other areas that have gone the other way."

Merv estimates that his forest currently consists of 60–65% Douglas-fir, 20% western redcedar, and 15–20% a mix of hardwoods and softwoods. A field survey conducted by the Silviculture Practices Branch in March 1996 confirms these figures. A summary of the survey is provided in the box on the back page.

Careful Harvesting a Cost-saver

Merv's harvesting operations are relatively small scale, requiring only a faller, a skidder operator, and a trucker. The same crew has been working for him for many years now, and their familiarity with the woodlot makes for a smooth operation. Remarkably, at age 82, Merv still does some of the falling himself. Always carefully planned, the falling is carried out so as not to damage young growing trees. If damage to marketable trees is unavoidable during falling, they are taken down first.

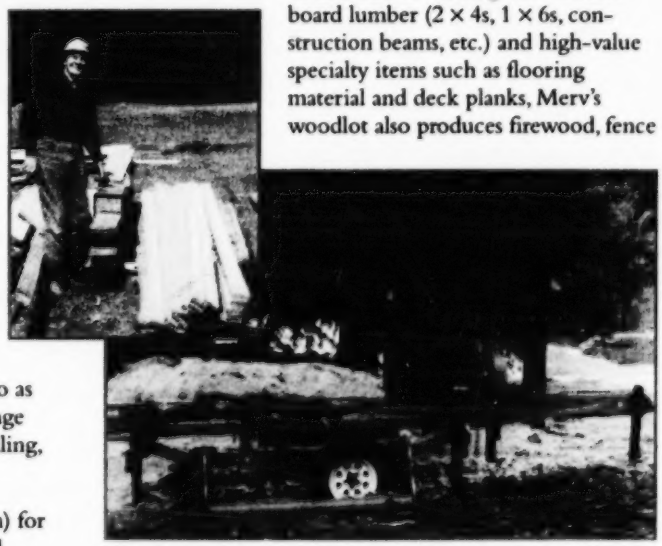
Merv cuts his logs into short lengths (8–9 m) for easier handling and uses a small rubber-tired skidder to minimize soil damage. On tight corners, he maintains a "guard tree" to protect valuable leave trees from being damaged by hauled logs. The logs are pulled out on a system of one main road, several permanent skidder roads, and some temporary skidder trails designed and built by Merv himself.

When asked about the additional harvesting costs associated with taking more time and using smaller equipment than in conventional operations, Merv is quick to respond. "The extra cost is more than made up by reducing the damage to growing trees. If you do your costing properly, you've got to consider the damage done to trees by your equipment. I take all these factors into my costing, and over the years I've found that paying a few dollars more for extra care has paid for itself several times over by reducing damage costs."

Growing for Quality, Not Quantity

Over the last few years, Merv has been adjusting his management strategy. He no longer hauls his logs to the larger mills, choosing instead to sell all his timber to a small mobile mill operator who saws the wood right on the property. To provide the mill with a steady supply of logs, Merv recently switched from his 5-year cutting cycle to an annual harvest. He also cuts more trees now since realizing he was undercutting his woodlot's growth rate by too large a margin.

In addition to turning out standard board lumber (2 × 4s, 1 × 6s, construction beams, etc.) and high-value specialty items such as flooring material and deck planks, Merv's woodlot also produces firewood, fence



Today, all the timber harvested from Wildwood is milled on site.

posts, cedar shakes, logs for log homes, Christmas trees, a small amount of pulpwood, and various hardwood products (red alder, maple, cherry, and arbutus). No matter what the product, most of Merv's buyers agree that the wood he grows is of exceptionally high quality. As a result, his timber often receives top dollar. For example, the last time Merv sold to the big mills, over 80% of his timber fell within the top third of market prices. "My goal has always been to go for quality, not quantity," he says.

International Recognition

Merv is always willing to share his more than 50 years of knowledge and experience with visitors from around the world. Over the last several years he has given countless tours of his woodlot to professionals, students, and other interested parties. The guest book he and his wife Anne keep in their home is filled with hundreds of names of foresters, scientists, and students from such places as Europe, Africa, Australia, Borneo, Chile, New Zealand, the former Soviet Union, and the United States.

One of the more influential visitors to Wildwood in 1993 was Jennifer Belcher, Washington's Commissioner of Public Lands, who oversees 800 000 ha of state forests and regulates all private logging in the state. Belcher was so impressed with Merv's operation that she is considering trying some of his techniques in parts of the Olympic Experimental Forest. "Merv's forest is an integrated ecosystem," she said. "It's a truly sustainable forestry system. If we're going to have production forestry in the future, it is going to have to go back to something like that."[1]

Merv is also well known for his skills as a speaker and educator. Equipped with an easy-going manner and never shy for words, he is in high demand to speak at environmental conferences and ecoforestry workshops. And literally thousands of students, from nearby University of Victoria and colleges as far away as New Hampshire and New Mexico, have benefited from his hands-on approach to teaching.

Merv's significant contributions to the environment and the ecoforestry movement have been recognized by several organizations. In 1995, he received the "Minister's Environmental Award for Individual Citizens," an annual award presented by the Ministry of Environment, Lands and Parks. In 1990, at the Hidden Valley Forest Reconstruction Conference near Eugene, Oregon, he shared the "Restoration Forester of the Year" award with Orville Camp, a well-known American ecoforester.

The number of articles written about Merv and his woodlot is impressive. His story has been told in major newspapers and magazines throughout North America and Europe. He has even contributed to a well-received book about his approach to forestry titled, *Wildwood, A Forest for the Future*.

But of all his accomplishments, perhaps the most important one to Merv occurred earlier this year when he was approached by Comox Timber Ltd. of Portland, Oregon, to assess their ongoing logging operations on Denman Island. In all his years of being in the business, this was the first time a commercial logging company had asked him for his forestry expertise. Merv was more than happy to comply. It not only signaled that some of his management techniques were gaining recognition in conventional logging circles, but it also gave him an opportunity to contribute where it counts the most—in the forest, where Merv's heart is.

Quick Facts About Wildwood:

Biogeoclimatic zone: CDFmm 01–04

Site index: western redcedar and Douglas-fir 23

Size: 55 hectares

Tree species by volume:

Fd 59%
Cw 23%
hardwoods 8%
Bg 6%
Hw 4%

Understory species:

salal
tall Oregon grape
sword fern
vanilla leaf

[1] From the *Seattle Post-Intelligencer*, June 10, 1993.

Wildwood Tree Farm Field Survey

A field survey of Merv's woodlot, conducted in March 1996, revealed some interesting trends. As Merv knows, his forest is slowly changing. What was once a predominantly Douglas-fir forest with some western redcedar now appears to be shifting to a mixed forest dominated by grand fir, Douglas-fir, western redcedar, and a small component of deciduous trees.

However, Merv has observed over the last 30–40 years that most of the grand fir regeneration tends to die out, especially in drier years, and therefore does not form a significant portion of the mature stand structure.

The vast majority of the wood volume in Merv's woodlot is in the larger size classes of Douglas-fir and western redcedar (Figure 1). Over the entire woodlot (55 ha) there are approximately 20 000 m^3 of standing timber, 70% of which is fair to good quality.

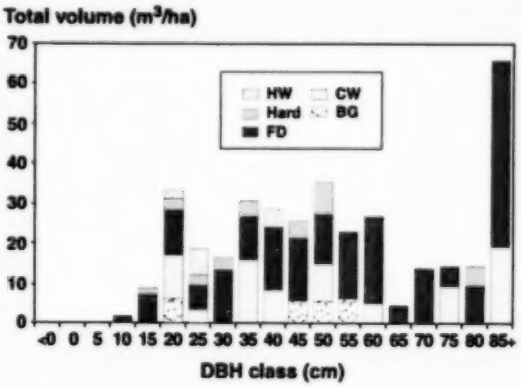


Figure 1. Total volume (m^3/ha) by species and diameter class.

Merv's forest exhibits a definite uneven-aged structure, although not a classic inverse j curve distribution (Figure 2). His forest is made up of young seedlings (regeneration), mature trees, and a small component of old growth. Saplings and poles (5–15 cm diameter) are scarce, the result of Merv's practice of undercutting in past years.

To address the resulting imbalance in size classes, some of the current regeneration could be harvested when it reaches 20–25 cm diameter in about 40 years. This would allow a more consistent flow of wood over the long term, while maintaining the levels of other forest values such as wildlife trees, biodiversity, and aesthetics.

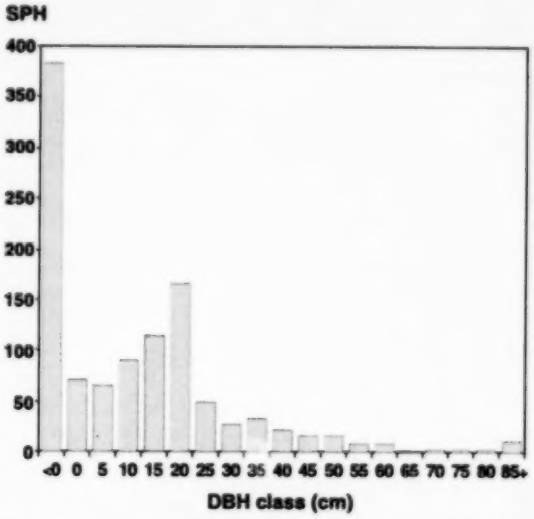


Figure 2. Distribution of stems per hectare by diameter class for all species.

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